AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-22. (canceled)

23. (Currently Amended) A method of providing assistance in navigating an aircraft (99) along an itinerary for the aircraft defined by itinerary data (ITI), the method ~~including~~ comprising:

calculating, on board the aircraft, a predicted trajectory (TDC) for the aircraft, as a function of the itinerary data (ITI) and characteristics of the aircraft, said predicted trajectory being continuous and three dimensional, including curvilinear portions, having no angle ~~point, and~~ point;

complying with the flight envelope of the ~~aircraft, the method including~~ aircraft; and

calculating a predicted time/date or speed for points of the predicted trajectory.

24. (Currently Amended) [[A]] The method according to claim 23, in which simulation is used to calculate at least a portion of the predicted trajectory in discrete manner, from an initial state vector (VEI) of the aircraft.

25. (Currently Amended) [[A]] The method according to claim 24, wherein said simulation includes simulating an [[the]] aircraft autopilot by an autopilot simulation (SPA) module, simulating the aircraft by an aircraft simulation (ATS) module, and simulating the aircraft guidance by a guidance simulation (SGU) module.

26. (Currently Amended) [[A]] The method according to claim 23, in which at least a portion of the predicted trajectory is calculated analytically, by solving a system of differential equations.

27. (Currently Amended) [[A]] The method according to claim 23, in which a curvilinear portion of the trajectory is calculated on the basis of a rate of variation in heading or in altitude that is less than the rate corresponding to the autopilot limitations.

28. (Currently Amended) [[A]] The method according to claim 23, in which the predicted trajectory (TDC) is calculated as a function of characteristics of the aircraft and of the outside environment; the characteristics being acquired using means on board the aircraft (99) and including at least:

- a geographical position for the aircraft (99);

• angles defining attitude and heading of the aircraft (99);

• a ground speed vector for the aircraft (99);

• an air speed vector;

• static temperature and pressure of the air surrounding the aircraft (99); and

• current state of the weight and of the engine(s) of the aircraft (99).

29. (Currently Amended) [[A]] The method according to claim 23, in which input of data modifying the itinerary and/or the trajectory is monitored, and in the event of an operator inputting data to modify the itinerary and/or the trajectory, the calculation of the trajectory is reiterated.

30. (Currently Amended) [[A]] The method according to claim 23, in which all or part of a state vector of the aircraft is monitored and/or measured, including a 3D position component, a 3D speed component, aircraft weight, and/or a state for each engine, and in the event of a substantial change in the state vector being detected, the trajectory calculation is reiterated.

31. (Currently Amended) [[A]] The method according to claim 23, in which a state vector of the atmosphere is monitored and/or measured, including wind speed, and/or air density or temperature, and whenever a substantial change in the state

vector of the atmosphere is detected, calculation of the trajectory is reiterated.

32. (Currently Amended) [[A]] The method according to claim 23, comprising the following steps:

i) recording in at least one on-board memory predicted capabilities or characteristics for the aircraft, together with a terrain and obstacle model; and then with the help of an on-board computer:

ii) calculating the predicted trajectory to be close to the itinerary and to correspond to the predicted capabilities or characteristics of the aircraft;

iii) determining a tube or tunnel extending along the trajectory and of section that corresponds to safety margins;

iv) looking to see whether a point of the terrain and obstacle model is included inside the tube or tunnel, and if so determining at least one trajectory portion that interferes with the terrain and obstacle model; and then

v) where appropriate, presenting to an on-board operator said trajectory and/or the trajectory portion that interferes, and doing so at a presentation frequency.

33. (Currently Amended) [[A]] The method according to claim 23, in which any interference between a safety volume extending along the setpoint trajectory and a terrain and

obstacle model is determined, and any interference is presented to an on-board operator in a manner that is repeated in time and at a presentation frequency that is high enough to enable the itinerary to be modified so as to cause said interference to disappear.

34. (Currently Amended) [[A]] The method according to claim 32, in which the presentation frequency is not less than 1 Hz.

35. (Currently Amended) [[A]] The method according to claim 34, in which the frequency lies in the range 5 Hz to 100 Hz.

36. (Currently Amended) [[A]] The method according to claim 32, in which, in order to present any interference to the pilot or operator, the following are displayed on a screen: a chart and/or a profile of the terrain to be overflown; a horizontal and/or vertical projection of the itinerary together with a horizontal and/or vertical section of the trajectory; and a first distinctive sign given to the portion(s) of the trajectory for which interference has been determined.

37. (Currently Amended) [[A]] The method according to claim 23, in which the trajectory is corrected at regular time

intervals at an updating frequency as a function of current parameters relating to the aircraft, the current point of the aircraft flight, and current parameters relating to the outside environment so as to obtain an updated setpoint trajectory for the pilot and/or the autopilot.

38. (Currently Amended) [[A]] The method according to claim 23, in which it is verified that the distance between the predicted trajectory and the current position of the aircraft remains below a predetermined value, and if not, an audible alarm is triggered and/or a warning sign is displayed.

39. (Currently Amended) [[A]] The method according to claim 38, in which the setpoint predicted trajectory includes a re-joining trajectory (TRV, TRH) calculated to connect the current position of the aircraft to the itinerary.

40. (Currently Amended) [[A]] The method according to claim 23, in which the setpoint trajectory includes at least one takeoff trajectory (H1-ToC) and at least one landing trajectory (FAF-H2).

41. (Currently Amended) ~~Apparatus~~ An apparatus (1) on board or mountable on board a rotary-wing aircraft (99) so as to

facilitate navigating, guiding, and piloting, the apparatus (1) comprising:

a system (2) programmed to calculate a three-dimensional continuous predicted aircraft trajectory (TDC) that is close to an itinerary, in accordance with the method of claim 23.

42. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 41, the apparatus (1) including a tool (7) for inputting itinerary data, a module for monitoring data input by said tool, and for causing the trajectory calculation to be reiterated when itinerary data is modified, and a member (6) for displaying the calculated trajectory.

43. (Currently Amended) ~~Apparatus~~ The apparatus according to claim 41, the apparatus (1) comprising:

- acquisition means (3) for acquiring parameters relating to the aircraft and to the outside environment, which acquisition means include means for accurately determining the position of the aircraft in three dimensions;

- a modifiable memory (4) or database for storing the itinerary;

- a memory (5) or database containing data concerning the height of terrain and obstacles to be overflown;

- display means (6) for displaying a chart to an on-board operator;

- an interactive graphics tool (7) for constructing the itinerary;

- trajectory calculation means (2) for calculating an essentially curvilinear trajectory in three dimensions that is close to the itinerary and that corresponds to the predicted capabilities of the aircraft, and preferably doing so at a calculation frequency that is not less than the presentation frequency;

- detector means (2') for detecting any interference between a safety volume extending along the calculated trajectory and terrain overflown by the aircraft;

- a guidance calculator (8) having inputs connected to the trajectory calculation means (2) and to the sensors (3), and having outputs connected both to a pilot data display device (9) and to an autopilot system (9'); and

- visual presentation means (6, 9) for presenting any interference to an on-board operator in a manner that is repeated in time at a presentation frequency that is high enough to enable the operator to modify the itinerary using the interactive tool so as to cause the interference to disappear.

44. (New) A method of providing assistance in navigating an aircraft (99) along an itinerary for the aircraft, the itinerary being defined by itinerary data (ITI) including waypoints to be

over flown, approached, or landed on by the aircraft the method comprising:

- calculating, on board the aircraft, a predicted trajectory (TDC) for the aircraft, as a function of the itinerary data (ITI) and characteristics of the aircraft, said predicted trajectory being close to the itinerary being continuous and three dimensional, including curvilinear portions, having no angle point, and complying with the flight envelope of the aircraft;

- calculating a predicted time/date or speed for several points of the predicted trajectory;

- determining whether a portion of the predicted trajectory interferes with a terrain and obstacle model; and

- displaying said portion of the predicted trajectory.